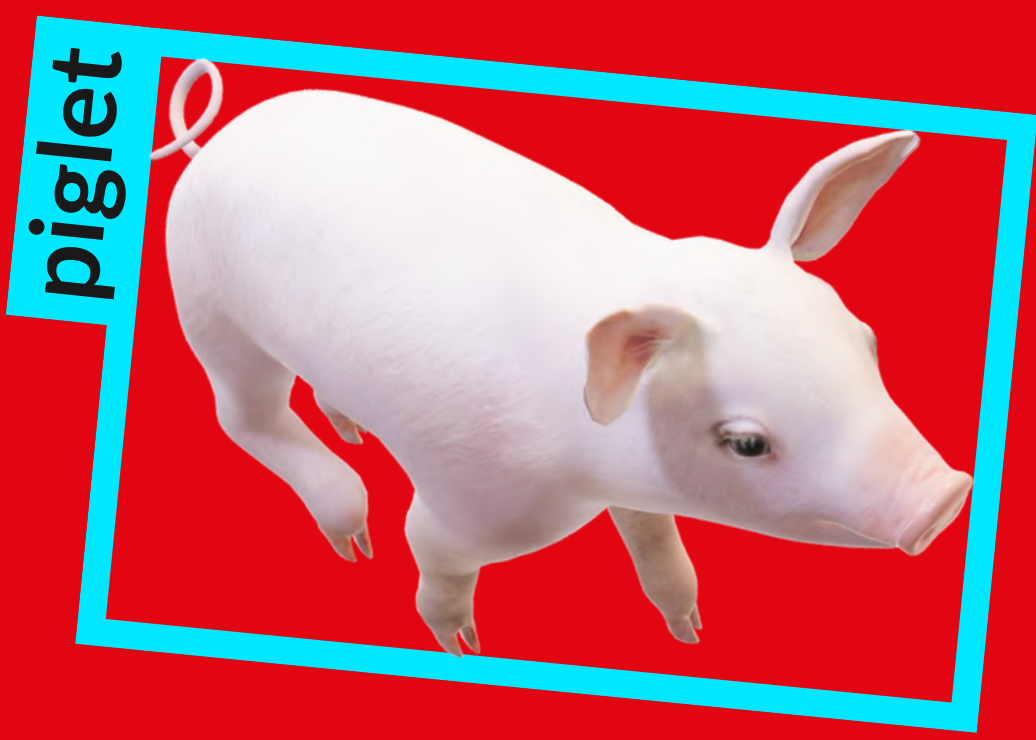




# BENCHMARKING MULTIPLE-PIGLET TRACKING AND DETECTION IN CROWDED FARROWING PENS

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New benchmarking datasets: piglet detection & multiple-piglet tracking

Two distinct facilities:  &  (both with permanent crating farrowing pens)

Piglets performing three critical behaviours: suckling, moving and resting

### detection dataset

784 

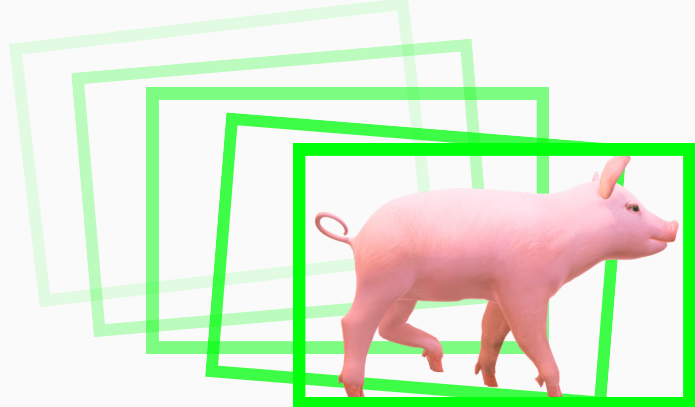
14,614 

Detectors benchmarked:

- YOLO26
- DETR

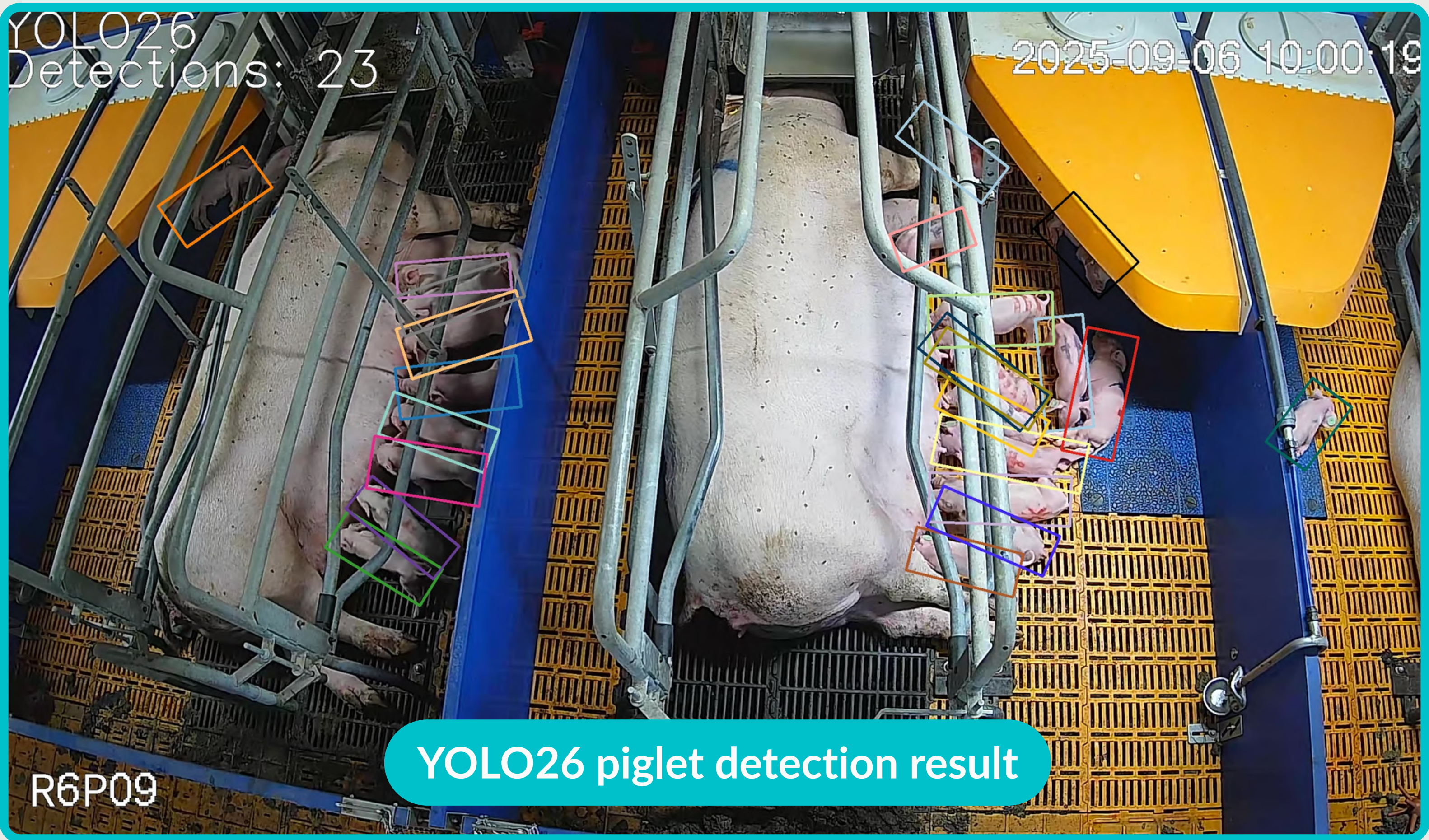
### tracking dataset

20 

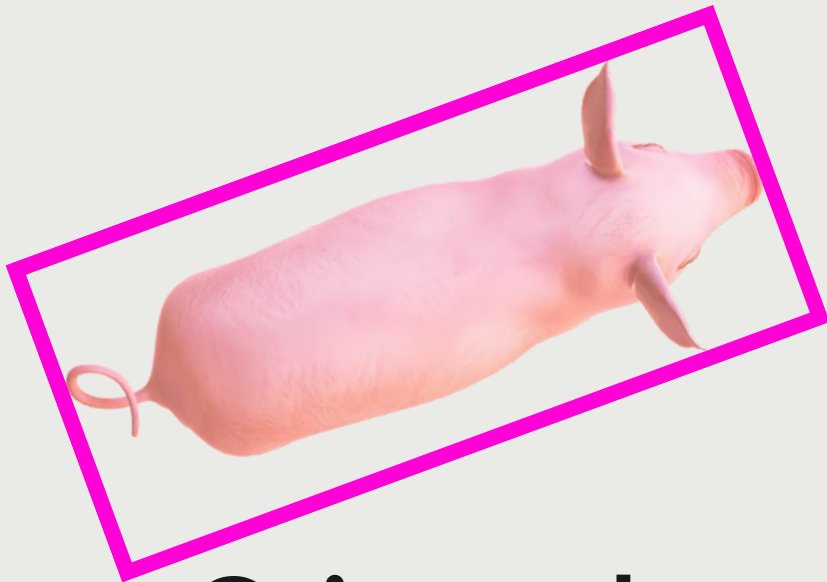
266 

Trackers benchmarked:

- Tracking by Detection: SORT, OC-SORT, BoT-SORT, ByteTrack
- End-to-End: MOTIP, SAM3



Axis-aligned Bounding Boxes

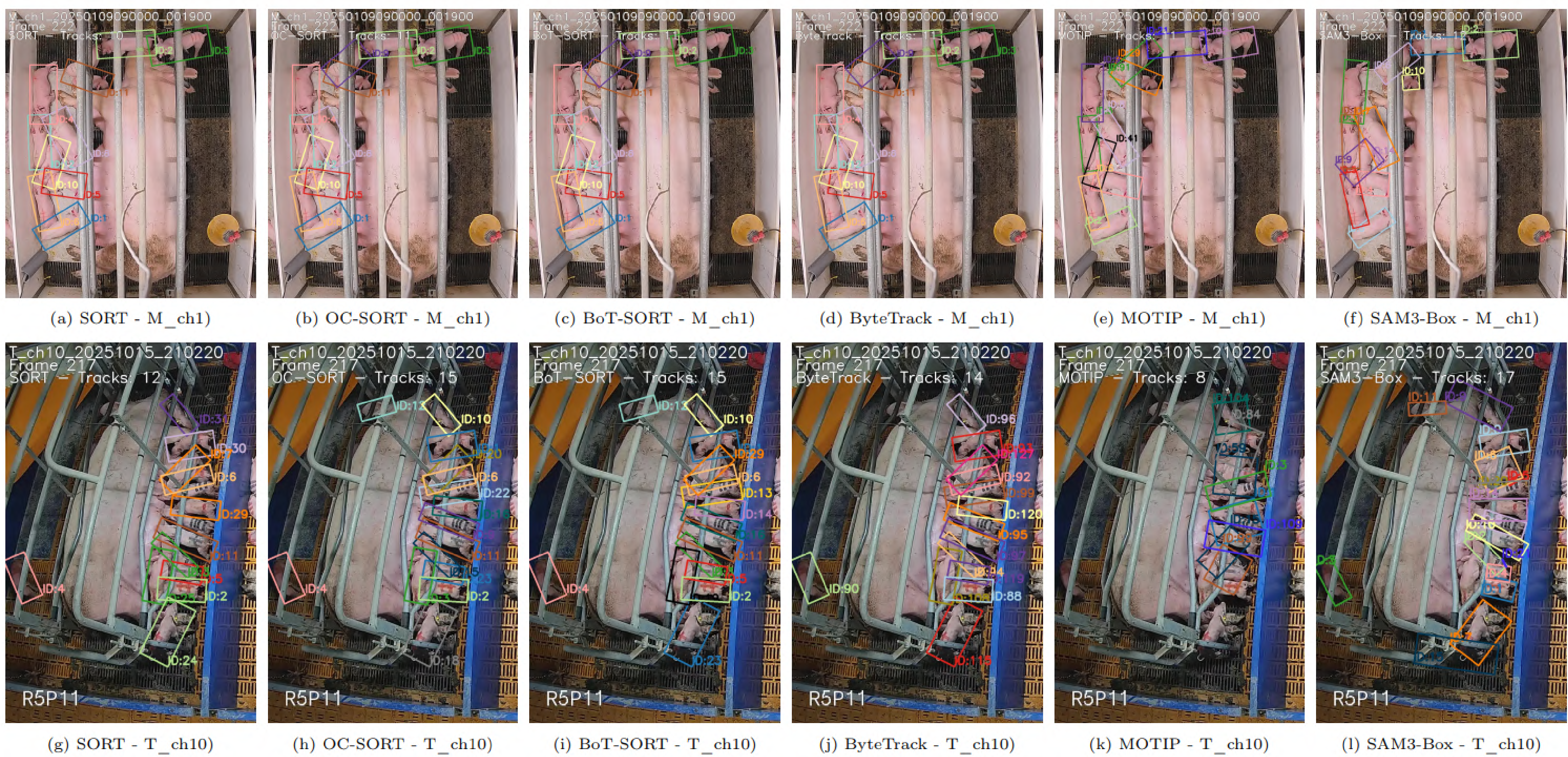


Oriented Bounding Boxes

OBBs:

- Less background covered, more accurate coverage of piglet body
- Negligible annotation overhead compared to annotating ABBs

### tracking results



Piglet tracking presents unique challenges due to the visual resemblance of subjects, sporadic movements, piglet adhesion & heavy occlusion